Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A submount, comprising:

(a) a submount substrate; and

(b) a solder layer that:

(b1) is formed on the top surface of the submount substrate; and

(b2) has a surface roughness, Ra, of at most 0.18 μm and has an average crystal-grain diameter of at most 3.5 μm.

2. (Previously Presented) A submount as defined by claim 1, wherein the solder layer has a surface roughness, Ra, of at most 0.15 μm.

3. (Previously Presented) A submount as defined by claim 1, wherein the solder layer has a surface roughness, Ra, of at most 0.10 μm.

4. (Cancelled)

5. (Original) A submount as defined by claim 1, wherein the top surface of the submount substrate has a surface roughness, Ra, of at most 0.10 μm.

6. (Original) A submount as defined by claim 1, the submount further comprising a solder-protecting barrier layer formed between the submount substrate and the solder layer.

7. (Original) A submount as defined by claim 6, the submount further comprising an electrode layer formed between the submount substrate and the solder-protecting barrier layer.

8. (Original) A submount as defined by claim 7, the submount further comprising between the submount substrate and the solder-protecting barrier layer:

(a) an intimate-contact layer formed such that it makes contact with the top surface of the submount substrate; and

(b) an element diffusion-preventing layer formed on the intimate-contact layer; the electrode layer being placed on the element diffusion-preventing layer.

9. (Original) A submount as defined by claim 8, wherein:

(a) the intimate-contact layer comprises titanium;

(b) the element diffusion-preventing layer comprises platinum;

(c) the electrode layer comprises gold;

(d) the solder-protecting barrier layer comprises platinum; and

(e) the solder layer comprises gold-tin-based solder.

10. (Original) A submount as defined by claim 1, wherein the submount substrate comprises an aluminum nitride-sintered body.

11. (Cancelled)